

no ab: ✓

BRITISH HONDURAS

REPORT OF THE DEPARTMENT OF AGRICULTURE FOR THE YEAR ENDED 31st DECEMBER, 1950.

AGRICULTURE IN THE COLONY.

GENERAL

1. With the devaluation of sterling in September, 1949, the British Honduras dollar remained at parity with the United States dollar or \$2.80 to the £; on December 31st, 1949, the British Honduras dollar was revalued to \$4.00 to the £.

WEATHER CONDITIONS

2. The disastrous drought of 1949 was broken by good December rains; 1950 started well, the rainfall for January in most districts being unusually heavy, and from February onwards weather conditions returned more to normal, though being somewhat erratic; the dry season was followed by good rainfall from June; a dry spell was experienced in August when some anxiety was felt for the corn crop; September was rainy and so was October, Belize establishing a new fifteen-year record with 20.61 inches for the latter month; November and December were drier than usual.

3. The June rains were heavy in all parts of the Colony and the flooding of the Sibun River caused damage to roads and crops in the Belize District; the Stann Creek Valley had its worst flood in over 20 years, causing major damage to crops and to one of the main bridges on the Valley road.

4. The cool weather started in November and proved, from all reports, to be exceptional; on December 13th the minimum temperature at the Baking Pot Central Farm was 49° F.

5. The Colony was spared from visitation by storm or hurricane although boisterous winds in September damaged some 10 to 15 per cent of the corn crop.

6. Rainfall statistics are appended to this Report. The number of rainfall recording stations has increased during the year from 12 to 20; it was possible, from the beginning of the year, to compile and issue monthly rainfall statistics to the general public.

AGRICULTURAL POLICY.

7. The aims and ideals of the Agricultural Policy were kept constantly in mind during the year and the work of the Department was planned to conform to the accepted Policy; the shortage of trained staff and of funds are, however, formidable obstacles.

8. Within its many limitations the Department has managed to make some headway. A start has been made with staff training by the holding of the first Staff Course and of District Staff meetings; efforts have been made, with indications of success, to improve the relationship between the Farm Demonstrator and the farmer; and investigations into local farming practices and their improvement have begun at the Central Farm.

GENERAL CONDITIONS AND PROGRESS IN THE CHIEF INDUSTRIES.

EXPORTS

9. A table showing the value of Agricultural Exports is appended to this Report and shows a total value of \$727,880 as compared with \$861,593 in 1949.

CITRUS

10. The total export value of the Citrus Industry amounted to \$543,258 as compared with \$528,619 in 1949. Exports were as follows:—

	Quantity	Value
Grapefruit	Cwt. 81,800	\$295,692
Oranges	" 1,238	2,466
Grapefruit Juice	Lb. 2,323,335	\$245,100
Total Value		\$543,258

17 MAY 1952

11. There were increases in both the quantity and value of fresh grapefruit, with decreases in grapefruit juice; no orange juice was exported.

12. Considerable extension of planting took place during the year in the Stann Creek Valley and additions were made on the processing side with the erection of a Sectionising Plant.

13. Conditions in the industry were generally satisfactory; Mexican fruit fly was reported as causing losses to late fruit in some areas. In the Northern districts good crops were set, the fruit being sold locally.

COCONUT

14. The Coconut industry continued to decline and exports were the lowest recorded for the present century. The export value amounted to \$76,630 as compared with \$83,442 in 1949; exports comprised 1,035,900 nuts (\$62,312) and 1,632 cwt. of copra (\$14,318). Cultivations are slow in recovering from the 1949 drought which was quickly followed by the 1950 dry season and general conditions are far from satisfactory.

15. There has been a welcome revival of interest on the part of some growers in their cocals and some good work was done in bush clearing, replanting and general field sanitation; but the majority of growers still make little or no attempt to clear their areas and to obtain, by cultivation and manuring, increased production from their trees. Many cocals in the Northern Districts appear not to have been touched, save for collection of nuts, since the hurricane of 1942.

BANANA

16. With the exception of the Stann Creek and Cayo Districts the area under Bananas was reduced and exports have further declined; in the Stann Creek Valley Messrs. British Honduras Enterprises with the Colonial Development Corporation have gone ahead with land clearing and planting Lacatan bananas over several hundred acres and though the June flood did considerable damage to young plantings recovery has been rapid.

17. Nearly 200 acres have been planted to Gros Michel bananas in the Western District; provision has been made for irrigation in periods of short rainfall.

18. Exports, again confined to Gros Michel bananas from peasant growers, amounted to 28,302 stems valued at \$21,607 a reduction of 30,254 stems and \$16,662 as compared with 1949.

SUGAR AND RUM

19. Sugar production was reduced on account of the poor conditions during 1949; the Corozal Sugar Factory manufactured 1,461.50 tons of sugar from 101,978 tons of cane, an extraction ratio of 9.44 tons of cane per ton of sugar. No sugar was exported.

20. Production by the Corozal Sugar Factory from the commencement of its operations in 1937 has been as follows:—

1937	..	..	..	416 tons	1944	..	..	..	1,116 tons
1938	..	..	..	1,036 "	1945	..	..	..	374 "
1939	..	..	..	1,360 "	1946	..	..	..	808 "
1940	..	..	..	1,002 "	1947	..	..	..	1,178 "
1941	..	..	..	1,470 "	1948	..	..	..	1,081 "
1942	..	..	..	1,438 "	1949	..	..	..	2,108 "
1943	..	..	..	1,483 "	1950	..	..	..	1,461 "

21. The small mills of the Toledo District produced 163 tons of sugar.

22. 9 distilleries were in operation during the year and produced 36,532 liquid gallons, equivalent to 55,193.117 proof gallons, of rum; none was exported. Excise duty on rum increased by \$31,943 to \$194,717.

23. Extension of planting has taken place in the Northern Districts; this was largely encouraged by the announcement made in April that His Majesty's Government was prepared to allow the Colony an export quota of 25,000 tons of sugar; following this announcement proposals for the rapid multiplication of planting material and for the establishment of a Central Factory were under active consideration.

24. The Colony was represented at the British Caribbean Sugar Conference which was held in Grenada in February; the delegation consisted of the Honourables W. H. Courtenay, O.B.E., J. Salvador Espat and John A. Smith with the Acting Director of Agriculture as Adviser.

FOOD CROPS

25. *Corn (Maize).* The shortage of local corn supplies resulting from the 1949 drought had to be made good by imports which totalled 3,827 cwt. valued at \$27,077; the sale of corn for relief was undertaken by the field staff of the Department.

26. Again this year the Marketing Board encouraged planting by issuing loans to farmers and loans covering 7,103 acres of corn were issued. With a good planting season the response was excellent and, though there were periods of anxiety during the growing season, by November a substantial crop had started to come in and this offset the need for further imports. Buying by the Marketing Board started in November and by the end of the year the Board had purchased 2,801 "cargoes" (of 60 quarts) or some 308,000 lb. as compared with total 1949 purchases (from the 1948 crop) of only 50,390 lb.

27. The Marketing Board purchased corn at \$3.00 per cargo of 60 quarts.

28. *Rice.* While yields were generally lower on account of erratic weather conditions the year was a satisfactory one and an increased area was planted. Marketing Board loans for rice covered 2,844 acres. More and more interest is being shown, not only in the North but also along the Belize River, in rice growing.

29. Up to the end of the year the Marketing Board had purchased 1,589,132 lb. of padi with more to come in during the first weeks of 1951; this takes no account of the quantity that is retained by growers for home use; and yet it was necessary during 1950 to import 1,248.3 tons of rice to the value of \$305,820 in order to maintain supplies throughout the year.

30. The guaranteed price offered for padi by the Marketing Board was \$4.30 per 100 lb. delivered at the Rice Mill.

31. Following on the visit of Mr. Gerald Lacey in 1949 it was decided, on the advice of the Agricultural Adviser to the Colonial Development and Welfare Organisation, to seek the help of Mr. H. E. H. Gadd, General Manager of the Mahaicony/Abary Rice Development Scheme in British Guiana; arrangements were made for Mr. Gadd to visit the Colony early in 1951.

32. *Legumes.* Results from the December 1949 plantings of Red Kidney beans were satisfactory and an increased acreage was planted towards the end of 1950; in the Western District particularly some of the larger planters are experimenting with bean production using mechanical equipment.

33. Imports of peas and beans during the year amounted to 6,742 cwts. valued at \$98,505; it is believed that the experiments with mechanised production will prove sufficiently successful to encourage large-scale growing and so materially reduce imports from dollar sources.

34. *Root Crops and Vegetables.* Production of root crops appeared to be adequate to meet local requirements.

35. There was a short glut of cabbage and tomatoes as a result of large plantings in November-December 1949; with the exception of this short period, there was the usual scarcity of fresh vegetables; 28 cwt. of fresh tomatoes valued at \$250 were exported.

COHUNE

36. Exports of cohune kernels, oil and meal were valued at \$36,250.

CACAO

37. Experimental importations of budwood and rooted cuttings of selected high-yielding clones from the Quarantine Nursery in St. Vincent, B.W.I., were made during the year but with little success.

38. Limited quantities of cacao were produced by small growers for local consumption; a large property in the Toledo District, with a fair acreage of neglected cacao, came under new ownership and resuscitation is likely; there have been no other developments. Exports of 7 cwt. valued at \$36 are recorded.

FISHERIES

39. Export figures for the Fishing Industry are again inserted as being of general interest; values were \$6,933 higher than for 1949:—

	Quantity	Value \$
Fresh Fish cwt.	975	6,701
Conch "	22	167
Dried Fish "	143	1,779
Lobsters "	442	7,276
Lobster Tails "	685	12,245
Total Value		\$28,168

ALLIGATOR SKINS

40. A useful export industry exists with Alligator Skins; in 1949 exports were valued at \$14,633 while in 1950 the value was \$12,646.

LIVESTOCK

41. Conditions were easier for livestock than in 1949, though the 1950 dry season, following so closely on the previous years drought, did not give pastures much chance to recover and there were losses of cattle in the Northern and Western Districts.

42. Nothing unusual was reported on the incidence of disease during the year, the usual intestinal parasites and various deficiencies being encountered with cases of equine distemper and mange, ulcerative stomatitis in cattle, canine distemper, fowl typhoid and fowl pox.

43. The Veterinary Officer was on 6 months vacation leave during the year. After some delay in recruiting an officer for the post of Livestock Officer, under the Colonial Development and Welfare Scheme approved at the end of 1949, Mr. Seymour S. Dale, of the Department of Agriculture, Jamaica, accepted the post and was appointed with effect from 31st December.

44. In July the Colony was visited by Mr. R. M. Arnold, B.Sc., M.R.C.V.S., Veterinary Investigation Officer, Jamaica. Two weeks were spent touring the Colony and Dr. Arnold submitted a useful report the main recommendations of which are summarised as follows:—

(1) Concentration on the Jersey/Montgomery for the Government Dairy herd and as a milk animal generally.

(2) Use of the Red Poll/Zebu for beef under general conditions with Aberdeen Angus/Zebu for areas of higher and well distributed rainfall where better and more constant feed is available.

(3) Continuation of breeding programme with Berkshires for improvement of local pigs; the Berkshire boars put into the Districts some years ago have effected great improvements.

(4) Provision of bulls, stallions and Donkey Jacks.

(5) Investigation into pastures and fodder crops, weed control in pastures and provision of improved dairy, pig and poultry feeds at economic prices.

(6) Continuation of the present survey of animal diseases.

(7) Improvement of existing legislation dealing with Animal Importation and Disease Control.

(8) Further training of extension staff in livestock and veterinary work.

45. Dr. Arnold commented favourably on the great potential of the Colony for livestock production; he also commented on the low standard of animal management and the lack of policy on the part of livestock owners and thus considerably strengthened the hand of the Department which has, throughout the year, both in the field and in its regular contribution to the Government Monthly Bulletin, endeavoured to stimulate interest in livestock management, the provision and improvement of pastures, planting of fodder grasses and improvement of water supplies.

46. During his visit Dr. Arnold paid particular attention to parasites of livestock and recorded the following identifications:—

Systematic Name:	Common (local) name	District collected	Site on host
ALL ANIMALS.			
<i>Dermatobia Hominis</i>	Beefworm	.. All parts ..	.. Larvae.
	Warble .. ..	.. ..	.. Subcutaneous.
<i>Tabanus</i> (at least 3)	Doctor fly	.. All parts ..	.. Blood-sucking.
	Horse fly .. ..	.. ..	.. ..
	'Botlas' fly	Esp. Stann Creek and Punta Gorda	Blood-sucker. Found in very large numbers in ears of horses.
HORSEKIND.			
<i>Ambylomma maculatum</i> }	 Silver-back	.. Corozal	
<i>Ambylomma cajanense</i> }	 tick ..	.. Stann Creek, Louisville, etc.	
<i>Demacentor nitens</i>	 Horse tick		
CATTLE.			
<i>Boophilus annulatus</i>	 Cattle tick	} Louisville, .. Banana Bank, .. Stann Creek, .. Louisville, etc. ..	
	 Texas fever tick. ..		
<i>Ambylomma maculatum</i> }	 Silver-back tick.		
<i>Ambylomma cajanense</i> }	.. ..		
<i>Haemonchus contortus</i>	 Twisted wire-worm	Baking Pot	.. 4th stomach.
<i>Setaria cervi</i> .. ..	.. ..	Baking Pot	.. Peritoneal cavity.
SWINE.			
<i>Stephanurus dentatus</i>	 Kidney worm	.. Baking Pot, Corozal	.. Ureter
<i>Metastrongylus elongatus</i>	 Lungworm	.. Baking Pot	.. Bronchii.
FOWL.			
<i>Ascaridia galli</i>	 Large white worm	Churchyard	.. Small intestine.
<i>Raillietina spp.</i>	 Tapeworm	Churchyard	.. Small intestine.
<i>Heterakis gallinae</i>	 Caecal worm	Churchyard	.. Small intestine.
LAND TORTOISE.			
<i>Ambylomma (Ampommoma) tuberculatum.</i>	 Tick	 Yo Creek.	

47. Other visitors of interest to the Livestock Industry were Mr. A. T. Sample and Dr. R. T. Allman, both of F.A.O., who visited in March and October respectively, in connection with surveys for F.A.O. and the Caribbean Commission.

48. Mr. Sample, with the assistance of the Department, collected local grasses and legumes, the determinations of which were subsequently received; as a result of this work the Department has been able to form the nucleus of a useful herbarium for reference purposes.

49. Dr. Allman made a general survey of the Livestock position and, in collaboration with Mr. Sample, presented a paper to the meeting of the Caribbean Commission which was held in Curacao in November.

50. Dr. Henri Stehle, Director of Agricultural Research in the French West Indies and French Guiana, paid a short visit in September in connection with studies on the local flora for the Caribbean Commission.

51. The Acting Director of Agriculture attended the Livestock Conference convened by the Caribbean Commission in Trinidad in March.

52. One interesting development is the small scale cheese-making enterprise started in the Cayo District; the product finds ready sale locally.

SOIL CONSERVATION

53. On the Baking Pot Central Farm all cultivation on sloping land was started on the contour and a permanent contour system, using elephant grass barriers at 6 foot vertical intervals, has been decided upon for laying down in 1951.

54. The heavy rains and floods in the Stann Creek Valley in June demonstrated the need for soil conservation measures in the Valley; the need exists in all Districts and it is evident that Demonstration Plots will have to be put down as and when possible; it is only by actual demonstration on the land that awareness of the soil erosion menace can be properly awakened.

IMPORTATION OF FOODSTUFFS.

55. The values of imports of the major foodstuffs were as follows:

Description	1950 \$	1949 \$
Livestock for food	—	5,950
Biscuits, Bread and Cakes	27,233	32,856
Butter	159,699	133,693
Butter Substitutes	60,592	16,219
Cheese	76,574	41,022
Cocoa, prepared	13,178	18,857
Coffee	30,058	21,148
Eggs, fresh	3,241	2,893
Fish, preserved	19,519	21,677
Rice	305,820	162,649
Corn	27,077	—
Flour	604,117	421,870
Peas and Beans	98,505	90,757
Lard and Substitutes	150,408	90,041
Beef and Pork, in barrels	108,315	85,520
Preserved meat	64,242	64,848
Ham and Bacon	36,899	26,222
Milk	573,884	319,731
Sugar, refined	35,873	23,478
Spices	13,581	4,574
Vegetables, potatoes, onions	86,007	66,023

56. Total imports of Livestock products were valued at over a million dollars (\$1,173,262); although complete self-sufficiency may be a dream, the livestock potential of the Colony is such that the reduction of this volume of imports by more than half is not an impossibility.

57. The bulk of coffee imports, which have averaged \$25,832 per annum over the last 4 years, should be capable of production locally.

58. Rice, peas and beans and vegetables are capable of considerable expansion.

59. Spices (import value \$13,851) deserve attention; flourishing nutmeg trees have been seen; pimento, cloves, vanilla, black pepper and cinnamon can be useful "sidelines" for the progressive small farmer with the right conditions.

MARKETING

60. The Marketing Board issued loans totalling \$45,867 to encourage the growing of corn and rice; purchasing of these products was also undertaken. In addition, the Board took charge of rice threshing operations and the operation of the Rice Mill in Punta Gorda.

61. The Board's operations in the field continued to be carried out by the extension staff of the Department and the Farm Demonstrators have spent a considerable amount of time on this work which includes inspection and measurement of land in connection with loan applications, issuing of loans, follow-up inspections, purchasing of produce and, unfortunately, collection of loan repayments and outstanding accounts for the Board.

62. The Acting Marketing Officer and the Secretary of the Marketing Board met the staff of the Department in Belize during the Staff Course; opportunity was taken to discuss the work of the Board and the Department's staff and to offer suggestions for improving and increasing the value of the Board's services to the farmer.

63. The Director of Agriculture is a member of the Marketing Board.

LAND ALLOCATION

64. According to statistics made available by the Survey Department the position regarding the allocation of land in the Colony at the end of 1950 was as follows:—

(Figures in acres)

District	Private Land	Crown Lands		Total
		Leased	Forest	
Corozal	331,695	170	127,655	459,520
Orange Walk	1,000,202	25	170,773	1,171,000
Belize	364,001	46,464	628,315	1,038,780
Cayo	446,932	940	660,028	1,107,900
Stann Creek	117,072	4,707	415,821	537,600
Toledo	241,741	853	1,117,676	1,360,000
	2,501,373	53,159	3,120,268	5,674,800

65. Under the head Crown Lands, Forest, is included 2,939 Location Tickets covering 52,711 acres and 488,384 acres of declared Forest Reserve.

WORK IN THE DEPARTMENT OF AGRICULTURE.

STAFF

66. Mr. C. W. L. Fishlock, Director of Agriculture, was transferred to Tanganyika on termination of vacation leave in May.

67. Mr. G. B. Gregory, Senior Agricultural Officer, acted as Director of Agriculture throughout the year.

68. Dr. P. G. Everett, Veterinary Officer, was on vacation leave prior to termination of contract from 27th April; Dr. Everett was re-appointed on a further 3 year contract as from 30th October.

69. Mr. S. S. Dale was appointed Livestock Officer from 31st December.

70. Mr. J. M. Cave, Assistant Agricultural Officer, assumed duty on 10th October after 5 years secondment to the Government of Barbados.

71. Mr. S. A. W. Boyd, Junior Agricultural Instructor, returned from vacation leave on 1st May. Mr. Boyd resigned his appointment with effect from 10th July.

72. Mr. P. B. Lizarraga, Senior Farm Demonstrator, was on vacation leave from 1st September.

73. Mr. J. A. Swasey was promoted to the grade of Farm Demonstrator, Grade I, from 1st January.

74. Mr. W. J. Baeza, Temporary Farm Demonstrator, was appointed to the permanent post of Farm Demonstrator Grade II from 1st January.

PLANT AND SEED INTRODUCTION AND DISTRIBUTION.

75. Introductions of planting material made during the year included the following:—

Dwarf Coconuts (3 varieties)	.. .. .	6 nuts	.. .. .	From St. Lucia.
<i>Luffa cylindrica</i>	.. .. .	Seed	.. .. .	" Cuba and Kew.
Uganda Grass	.. .. .	.. .. .	.. .. .	" Imperial College of Tropical
Merker " }	.. .. .	Cuttings	.. .. .	Agriculture.
Napier " }	.. .. .	.. .. .	.. .. .	.. .. .
Pineapple, variety Cabezona	.. .. .	Plants	.. .. .	" Puerto Rico.
Cacao selections	.. .. .	Budwood	.. .. .	" St. Vincent, B.W.I.
Kikuyu Grass	.. .. .	Plants	.. .. .	" Jamaica.
Miscellaneous Legumes	.. .. .	Seed	.. .. .	" Bombay, through F.A.O.
Vegetable seeds for trial	.. .. .	Seed	.. .. .	" Puerto Rico.
Miscellaneous sorghums	.. .. .	Seed	.. .. .	" Guadeloupe, F.W.I.
Miscellaneous Ornamentals	.. .. .	Seed	.. .. .	" Jamaica.
Miscellaneous Ornamentals	.. .. .	Cuttings	.. .. .	" Jamaica.

76. Regular importations of vegetable seeds were made; to facilitate distribution these were put up in 5-cent packets and supplies kept in all Districts.

TRANSFER OF HEADQUARTERS

77. Plant distribution, mainly from the Stann Creek Agricultural Station, was as follows:—

Budded Citrus	..	..	..	..	3,091 plants
Mangoes	..	..	..	..	458 „
Other economic	..	..	..	..	100 „

TRANSFER OF HEADQUARTERS

78. Work on the staff quarters at the Baking Pot Central Farm progressed rapidly and it was possible to transfer the Departmental Headquarters from Belize to the Central Farm in March.

79. The Veterinary Officer continued to be stationed in Belize with a portion of the former Department office retained for his office and surgery; arrangements were also made for the Farm Demonstrator in charge of the Belize District to be available at the Belize office on Fridays and Saturdays.

WORK AT THE AGRICULTURAL STATIONS

80. The position with the Agricultural Stations remained much as it was at the end of 1949, activity being restricted to the Stann Creek and Punta Gorda Stations.

81. At Stann Creek the main work was in connection with Citrus propagation and the nursery work being done for the Colonial Development Corporation.

82. Citrus nursery work gave disappointing results; there were indications that the soil of the nursery area is completely played out; no farm-yard manure or compost have been applied for some considerable time and the practice of distributing plants year after year with a ball of earth has eventually taken most of the good soil away from the Station; the water-supply system was found to be woefully inadequate and was at its worst in the dry months when water was most needed.

83. Of the Cacao seedlings raised in 1949 for the Colonial Development Corporation, some 40,000 were retained at the Corporation's disposal; these eventually became overgrown and the Corporation decided to stop all expenditure so that they had to be discarded; some were transplanted into the *Lacatan* Banana plot and used for experimental budding with I.C.S. clones and two trial shipments were received from the Plant Quarantine Nursery in St. Vincent, B.W.I.; of these, the budwood that was received in June arrived in excellent condition and it is unfortunate that within two days of budding the whole area was submerged under 4 feet of flood water and all buds failed.

84. The Corporation's Manilla Hemp nursery of 4½ acres was maintained until March when the Corporation decided to stop all expenditure on this project; bare maintenance has been carried on from Station allocations.

85. The Corporation continued to finance the maintenance of the *Lacatan* Banana nursery and commenced to take planting material from the area.

86. Great difficulty was experienced in maintaining the many buildings on the Station; a survey revealed that every building was in need of repair and it was necessary to discard some buildings entirely.

87. At the Agricultural Station in Punta Gorda, Toledo District, work was kept to the minimum owing to shortage of funds.

88. Further work with rice was carried out; of the 32 varieties which had been grown on the Station, 18 of the most promising were selected for further trial. The variety McKenzie Large has shown up this year as a heavy yielder, giving 2,448 lb. per acre against 1,044 lb. for the standard B.G. 79 and 1,636 lb. for Lead, another variety of promise.

89. Work at the Station is handicapped by the rather uneven nature of the plots; further levelling is necessary before this area can be fully used.

90. Here again there has been difficulty in maintaining the buildings owing to steady deterioration over the past few years.

91. At the Orange Walk Station the Tobacco Production project under the Import Control Department came to an end and the building which was formerly the Station office and had been occupied by the Tobacco Project Manager reverted to the Department. The District Agricultural Officer's quarters continued to be occupied by the Public Works Department Feeder Roads Engineer and quarters for the Senior Farm Demonstrator had to be rented in the town of Orange Walk.

92. During the year consideration was given to the various requirements which would form part of the proposed Development Plan for the Colony; it is obvious that the proper establishment and staffing of Agricultural Stations is one of the essentials for the functioning of the Department.

THE BAKING POT CENTRAL FARM

93. Considerable progress was made on the Farm during the year; the area for arable cropping was extended and a start made with regular maintenance of grounds and the planting of ornamental trees and shrubs. The force of ex-servicemen was reduced and opportunity taken to employ the rather more amenable labour available in the district. The acquisition of a farm tractor with associated equipment has resulted in better and more economical working. The years work is outlined in the following paragraphs:—

94. Rainfall recorded was 50.17 inches as compared with 25.19 inches in 1949, the first year of recording; monthly rainfall was as follows:—

Month	1949	1950
January	2.90	6.77
February	.44	2.01
March	.96	1.49
April	.13	.47
May	—	.99
June	3.32	10.06
July	1.21	4.98
August	2.45	5.78
September	4.21	4.80
October	2.03	8.92
November	1.96	2.30
December	5.58	1.60
Total	25.19	50.17

95. While Spring crops germinated and developed well, inadequate rainfall in November and December caused Fall-planted crops to develop poorly and low yields from these were anticipated.

96. With the completion of living quarters by the Public Works Department the Departmental Headquarters were transferred from Belize in March. Work on the access road to the staff quarters, fencing of quarters and the planting of grass and ornamentals went ahead during the rainy season.

97. A new village site was surveyed to the North of the main Cayo highway; the Anglican School has been removed from Baking Pot Village on the bank of the Belize River and a new School with teacher's quarters erected on the village site; it is hoped that a resident labour force will accumulate in the new village.

98. It was originally intended to use the Garbutt Creek on the Eastern boundary as a water supply for the Farm area; this intention has had to be abandoned owing to the drying-up of the Creek by the middle of the dry season; preliminary borings have given reasonable prospects for getting underground water and an exploratory well was started.

99. Throughout the dry season all efforts were concentrated on removing stumps and logs left from the incomplete clearing operations of 1949 and getting the arable area in reasonable readiness for mechanical implements.

100. In August a Ferguson tractor was purchased along with essential equipment comprising a 2-disc plough, offset harrow, middle-buster, drill planter, ridger, subsoiler and soil scoop. First results were most encouraging and the work of the Farm has been considerably extended.

101. Corn (maize) planted in June started well but weeding costs were high and the crop was damaged by high winds in September; a fair portion of the crop was therefore picked and sold as green corn and the final yield of dry shelled corn amounted to only 350 lbs. per acre.

102. Rice, both B.H. Creole (Upland) and B.G. 79 (Swamp), were tried but without adequate preparation of the land weed growth far outstripped the rice while the high cost and poor quality of the work soon prohibited hand weeding; further losses were experienced by heavy rain during harvesting and the collapse of the small power thresher. The final yield of B.H. Creole was the poor figure of 820 lbs. per acre.

103. Red Kidney beans planted in December 1949 grew well and yielded at the rate of 670 lbs. per acre. For the 1950-51 crop land preparation and planting were done by the new Ferguson equipment at considerably reduced cost and it is unfortunate that a dry December gave the crop a setback.

104. Black-eye peas planted in December 1949 yielded 803 lbs. per acre. A planting in June grew well and made remarkable vegetative growth but with negligible fruit setting and yield. A further planting was made in December but this soon began to show the effects of the low rainfall.

105. Encouraging results have been obtained with peanuts as shown by the following yields (dry nuts in shell):—

Variety	Planted Sept. 1949				Planted Nov. 1949			
	Reaped Feb. 1950				Reaped May 1950			
Tennessee Red	1,133	lbs.	per	acre	610	lbs.	per	acre
Empire Bright	924	"	"	"	733	"	"	"
Virginia White	448	"	"	"	333	"	"	"

106. Plantings in 1950 started well and gave promise of a good crop despite the dry condition at the end of the year.

107. Pigeon peas planted in 1949 did reasonably well and a start was made with selecting seed for replanting; selected seed was planted in June and by the end of the year the trees were fruiting heavily.

108. Bengal beans and *Canavalia* were planted in an attempt to smother the thick growth of semi-wild sweet potato found in the old "milpa" areas.

109. Sesame, (*sesamum indicum*), locally known as "wanglar", is grown on a small scale in most districts of the Colony and trials were made with a selected white-seeded type; from the crop planted in late 1949, a yield of 390 lbs. of seed per acre was obtained. The 1950 planting in June started well and made vigorous vegetative growth but yielded only 250 lbs. per acre.

110. The use of mechanical equipment for land preparation, planting and cultivation has considerably reduced the cost of these operations; to give one example, labour costs of planting Red Kidney beans by hand worked out at around \$11.00 per acre whereas with a tractor and planter the cost was reduced to \$1.00 per acre. It is in the reaping and processing operations that costs are high and bordering on the uneconomic; it is hoped that in due course further equipment will be forthcoming for experiment and trial with reaping and threshing crops.

111. Trials with sweet potatoes were confined to three varieties from the Stann Creek District: yields have been:—

"John Directly"	9,690	lbs.	(4.32 tons)	per	acre
"Red Nut"	5,377	"	(2.40 "	"	"
"Local Red"	3,118	"	(1.39 "	"	"

112. Rat damage was found to be extensive; the cost of contour ridging by hand labour proved prohibitive and it was only towards the end of the year that the tractor-drawn implements reduced the cost of land preparation to a reasonable figure.

113. The 1949-50 yam crop was harvested early in the year with the following results:—

"Barbados" variety	8.94	tons	per	acre
"St. Vincent" variety	7.68	"	"	"
"Negro" or "Carib" variety	5.07	"	"	"
"Yellow" Yam variety	4.57	"	"	"

114. One half of the yam area was intercropped with blackeye peas in an effort to exercise some control over weeds without expensive hand weeding and the yams were staked; in the remainder of the area the yams were interplanted with corn to save staking costs.

115. One variety of sweet cassava and 5 varieties of bitter cassava were maintained; there is no demand in the District for cassava for starch making and the sweet cassava sells very slowly.

116. The vegetable garden was kept going throughout the year and there was a lively demand for fresh vegetables. The area was extended and a proper tool room and shed erected.

117. Some 1,500 sour orange seedlings were planted out as a start in propagating citrus plants for distribution; a start was also made on the production of other economic and ornamental plants for sale.

118. As in 1949, the unreliable water supply was the limiting factor in the success of this area; reorganisation of the pump and piping, and repairs to the overhead tank effected some improvement, but the drying out of the Creek at the critical period of the dry season retarded operations considerably, even though extensive mulching was done.

119. The purchase of a small Rotary Hoe has greatly helped operations.

120. The Livestock on the Farm kept in reasonably good condition; stockmen were engaged in periodical rounding up of the animals, spraying for tick control and dressing wounds. Culling of the herd was started and culls were slaughtered at regular intervals for sale on the Farm.

121. Further fencing was done along the Western boundary of the property and existing fences were maintained.

122. Without a proper water supply and suitable accommodation the keeping of pigs was impossible: animals suitable for breeding were sold off and the remainder slaughtered at intervals for sale as pork.

123. In addition to the Ferguson tractor and equipment and the small "Gem" Rotary Hoe that were purchased during the year, a new Dodge truck has replaced the two unserviceable trucks originally brought to the Farm and a second-hand Jeep has been obtained for travelling on the Farm. A small portable water pump was also purchased.

124. The Allis-Chalmers Model "M" tractor gave reasonable service, particularly for hauling of logs and stumps, before the arrival of the wheeled tractor.

125. Trials with Chlordane as a controlling agent for wee wee ants (*Atta sp.*) have proved outstandingly successful.

126. Experiments with "Fernoxone" and "Dicotox" as weed killers have given most encouraging results and further work is planned for 1951.

127. Preliminary trials with fertilisers on corn have shown an increment of 20 per cent from applications of Nitrogen.

PESTS AND DISEASES

128. There were no extraordinary outbreaks of pests or diseases during the year. Growing beans at the Central Farm were attacked by Flea Beetles but dusting with DDT resulted in satisfactory control.

129. The outstanding pest of the Colony is the "wee wee" ant, *Atta cephalotes*; trials made early in the year with Chlordane have given spectacular results and shown that it is a sure control for the pest. Experiments were conducted on the Central Farm and in the Districts and demonstrations were given to the staff at the Staff Course on the method of application, using a knapsack sprayer and also a very simple home-made applicator that is within the reach of every farmer; with adequate supplies of Chlordane assured, farmers have begun to use it and by the end of the year glowing accounts had been received of its success in all areas.

130. Damage by froghopper was observed in the cane growing area of the Corozal District; this insect was subsequently identified as *Aensolamia postica jugata* (Fowler).

131. The pocket gopher or ground mole was active in most districts; trapping is regarded as the best means of control and one concern in Stann Creek has encouraged trapping by offering a bounty for the pest.

132. Panama Disease and Cercospora Leaf Spot are the major plant diseases; the large banana projects in the Stann Creek and Cayo Districts are obtaining satisfactory control of the latter disease by a regular spraying programme.

EXTENSION AND OTHER WORK

133. The field staff has been active in making and maintaining close contact with the farmer; at the Staff Course special emphasis was placed on the various ways and means of improving the relationship between the Farm Demonstrator and the farmer and of increasing the usefulness of the Department to the planting community.

134. With a small population so widely scattered transport is a problem; however, the demands of the Department were very generously met by Government and by the end of the year the Department was reasonably mobile. Nearly all the Farm Demonstrators owned horses; doreys were maintained at Barranco, Monkey River and Sittee and two new outboard engines obtained. Land Rovers were purchased to replace the obsolete heavy trucks in the Corozal and Stann Creek Districts; the truck at Punta Gorda was completely overhauled and a new truck and second-hand Jeep obtained for the Central Farm; an "estate car" was purchased for Headquarters.

135. An interesting experiment was made in the Stann Creek Valley at the instance of the Hon. C. J. Benguche when a tractor and heavy disc plough and harrow were used for ploughing and harrowing of farmers' lands on a cost recovery basis; plots were rather scattered and in several cases too small for good work to be done but the response was encouraging and over 39 acres were done.

LAND INSPECTION

136. Of 170 applications received from the Survey Department for inspection of land for alienation under the Location Ticket System, 113 were inspected and reported on.

137. During the year a Committee, of which the Director of Agriculture was a member, was appointed to consider the revision of the Location Ticket; amendments relaxing the strict requirements of the Location Ticket and giving the Department of Agriculture wider powers in regard to inspection for the issue of title were approved by Government.

138. It has become apparent that a great deal of time and effort and money is wasted by farmers who take out Location Tickets; an allottee is given five years in which to pay for his land, after which time the land is inspected by the Department of Agriculture which recommends whether title shall be granted or withheld; only too often title cannot be recommended because the allottee has chosen unsuitable land and has failed, often despite a very commendable effort on his part, to make anything of it; the Department is now trying to encourage prospective Location Ticket holders to seek early advice, in advance of the issue of the Location Ticket, on the selection of the land they propose to purchase rather than face disappointment after five years of work.

OFFICIAL VISITS

139. Reference has already been made to the visits of Dr. R. M. Arnold, Mr. A. T. Semple, Dr. R. T. Allman and Dr. Henri Stehle.

140. In January Dr. G. A. C. Herklots, Secretary for Colonial Agricultural Research, visited the Colony.

141. In May the Department was privileged to welcome Mr. G. F. Clay, C.M.G., O.B.E., M.C., Agricultural Adviser to the Secretary of State, who was accompanied by Mr. A. de K. Frampton, Agricultural Adviser to the Development and Welfare Organisation; during the course of their visit they toured every district of the Colony and saw the many problems at first hand.

142. At the end of their visit Messrs. Clay and Frampton returned to Jamaica where Mr. Clay presided over a Conference of Heads of the Departments of Agriculture in the British Caribbean; the Acting Director of Agriculture attended this Conference.

143. Mr. J. V. Lochrie, the Empire Cotton Growing Corporation Cotton Officer for the West Indies and Cotton Specialist, Development & Welfare Organisation, paid a visit in February to investigate the prospects of cotton cultivation in the Colony; Mr. Lochrie has made useful recommendations regarding varieties to be used for experimental plantings and investigations into the pest position.

STAFF COURSE

144. In June the first Staff Course in the history of the Department was held in Belize, the cost being met by a special grant from Development and Welfare funds.

145. The Course lasted for four days, three of which were spent in Belize and were occupied with lectures and talks by senior members of the staff and by the heads of the Forestry and Social Development Departments and the Acting Marketing Officer, and with full and interesting discussions on Departmental and general problems; one day was spent at the Baking Pot Central Farm where demonstrations of vegetable growing, use of Chlordane for wee wee ant (*Atta sp.*) control, use and care of spraying equipment etc. were arranged.

DEVELOPMENT AND WELFARE SCHEMES

146. The following paragraphs cover the various Development and Welfare Schemes which were in operation during the year:—

147. *D.13 B. Prizes for Small Farms.* Expenditure amounted to \$212.75, being payments for prizes.

148. *D.229. Local Food Production.* Expenditure during 1950 was \$9,776.46 and comprised payment of salaries and allowances of the staff of Farm Demonstrators employed under the scheme; supplementary provision was made so that the scheme could operate for the whole of 1950 and a further supplementary grant was made to insure continuity in 1951.

149. *D.981A and D.981B. Baking Pot Central Farm.* Expenditure amounted to \$18,937.28. All staff quarters were completed and in occupation; office furniture and equipment was provided; land clearing, fencing and other development work were carried out; the years work on the Central Farm has been detailed in preceding paragraphs.

150. *D.1108 (61). Agricultural Training Course.* Expenditure amounted to \$457.93.

151. *D.1236. Livestock Officer.* Expenditure of \$6,405.57 was incurred on the erection of the Livestock Officer's quarters; a Livestock Officer was selected and appointed from 31st December.

152. Total expenditure by the Department on Development and Welfare Schemes was \$35,789.99, being 3.12 per cent. of total Development and Welfare Expenditure for the year.

EXPENDITURE AND REVENUE

153. Expenditure and Revenue of the Department for 1950 is presented in the Financial Statement. Of a total expenditure for the Colony of \$2,950,367 (excluding Development and Welfare Schemes), the Department's allocation amounted to \$91,230.66 or 3.09 per cent of the total.

FINANCIAL STATEMENT

Expenditure

Head 5—Agriculture											\$	¢
1.	Personal Emoluments	..	..	..	..	..	..	..	..	..	32,150.58	
2.	Transport Allowances	..	..	..	..	..	..	..	..	..	978.00	
3.	Travelling	..	..	..	..	..	..	..	..	..	2,979.89	
4.	Running and Maintenance Costs of Vehicles	..	..	..	..	..	..	..	..	..	2,066.91	
5.	Freight on Plants, etc	..	..	..	..	..	..	..	..	..	168.22	
6.	Scientific Equipment	..	..	..	..	..	..	..	..	..	51.00	
7.	Incidentals	..	..	..	..	..	..	..	..	..	34.86	
8.	Upkeep of Farm Equipment	..	..	..	..	..	..	..	..	..	271.23	
9.	Upkeep of Temporary Buildings	..	..	..	..	..	..	..	..	..	381.38	
10.	Labour	..	..	..	..	..	..	..	..	..	7,559.90	
11.	Control of Pests and Diseases	..	..	..	..	..	..	..	..	..	1,450.47	
12.	Implements and Tools	..	..	..	..	..	..	..	..	..	732.03	
13.	Revenue Producing Operations	..	..	..	..	..	..	..	..	..	3,977.28	
14.	Fees for Services of Veterinary Officer	..	..	..	..	..	..	..	..	..	—	
15.	Housing Rentals—Farm Demonstrators	..	..	..	..	..	..	..	..	..	528.90	
16.	Publications and Books for Agricultural Library	..	..	..	..	..	..	..	..	..	170.06	
17.	Baking Pot Central Farm	..	..	..	..	..	..	..	..	..	17,022.55	
18.	Maintenance of buildings, offices, roads and village sites, Baking Pot Estate	..	..	..	..	..	..	..	..	..	1,908.71	
<i>Special Expenditure</i>												
19.	Agricultural Extension Work	..	..	..	..	..	..	..	..	..	1,003.22	
20.	Boats and Doreys	..	..	..	..	..	..	..	..	..	588.28	
21.	Visits of Specialists	..	..	..	..	..	..	..	..	..	619.95	
22.	Van, Tractor and Implements for Baking Pot Estate	..	..	..	..	..	..	..	..	..	11,247.37	
23.	Clearing of Canals "Dump" rice growing area	..	..	..	..	..	..	..	..	..	100.00	
24.	Leaf Spot Disease Control	..	..	..	..	..	..	..	..	..	372.35	
25.	Storm Damage Repairs	..	..	..	..	..	..	..	..	..	497.52	
26.	Purchase of Vehicles	..	..	..	..	..	..	..	..	..	4,370.00	
TOTAL, AGRICULTURE											\$91,230.66	

Revenue

Head	Subhead		
4	8	Sale of Government Stores	\$160.46
4	14	Sale of Produce and Plants, etc. Agricultural Stations	3,868.87
4	15	Sale of material for control of pests	50.69
4	25	Fees for Veterinary Officer's Services	—
4	27	Receipts from Central Farm	1,710.32
4	28	Veterinary Officer's Incidental Expenses	1.50
TOTAL			\$5,791.84

LEGISLATION

154. Legislation enacted during the year in connection with Agriculture was as follows:—
Statutory Instrument No. 1 of 1950. Permitting the importation of pineapples from Mexico; in force for the year 1950 only.

Statutory Instrument No. 54 of 1950. Prohibiting the importation of any animal, carcase fodder or litter from the Republic of Venezuela.

Statutory Instrument No. 62 of 1950. Permitting the importation of hides from the Territory of Quintana Roo, Mexico.

155. A new graduated system of Land Tax came into force during the year; the land is assessed according to the type of forest it carries, or, in the case of agricultural land, the type of forest that it originally carried; the classification is as follows:—

	Tax per acre
(a) Savannah (wet, dry and scrub)	2¢
(b) Savannah (good pasture land subject to inundation)	2¢
(c) Pine Ridge 1st Class	4¢
2nd Class	3¢
3rd Class	2¢
(d) Low Forest (Akalche)	2¢
(e) Medium and High Forest	4¢
(f) High Forest	6¢

156. In addition to the above, a Road Tax of 3 cents per acre is levied on lands within one mile of all roads that are maintained by Government funds.

AGRICULTURAL EXPORTS 1950.

Item	Quantity	Value \$	Total Value \$
Citrus:—			
Grapefruit, fresh	cwt. 81,800	295,692	
Grapefruit Juice	lb. 2,323,335	245,100	
Oranges, fresh	cwt. 1,238	2,466	543,258
Fruits, other	cwt. 16	1,064	1,064
Coconuts	no. 1,035,900	62,312	62,312
Copra	cwt. 1,362	14,318	14,318
Bananas	bunches 28,302	21,607	21,607
Tomatoes	cwt. 28	250	250
Cohune:—			
Cohune kernels	cwt. 2,983	31,933	
Cohune meal	cwt. 18	41	
Cohune oil	gals. 2,697	4,276	36,250
Livestock:—			
Cattle	no. 171	7,771	
Other kinds	no. 50	200	7,971
Cocoa, raw	cwt. 7	36	36
Fishery Products:—			
Conch	cwt. 22	167	
Fresh Fish	cwt. 975	6,701	
Dried Fish	cwt. 143	1,779	
Lobsters	cwt. 442	7,276	
Lobster Tails	cwt. 685	12,245	28,168
Alligator Skins	cwt. 6,943	12,646	12,646
TOTAL VALUE			\$727,880

SUMMARY OF RAINFALL FOR THE YEAR 1950—BRITISH HONDURAS

District and Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
COROZAL DISTRICT													
Corozal Town	3.50	1.84	.30	.20	.03	13.08	2.16	4.30	5.90	8.50	—	—	(a)
Former Agricultural Station	2.08	1.85	.24	nil	.67	15.73	2.39	3.16	6.18	11.91	.81	1.34	46.36
Louisville Farm	4.52	2.11	.45	nil	.67	21.16	2.28	4.16	6.85	9.68	1.04	1.93	54.75
ORANGE WALK DISTRICT													
Orange Walk Town	—	—	—	—	—	—	—	7.81	6.25	12.02	.43	2.36	(b)
San Estevan	—	—	—	—	—	—	2.81	3.95	4.32	9.82	1.29	1.75	(c)
BELIZE DISTRICT													
Belize	7.34	3.99	.68	2.28	.25	9.63	1.86	6.57	7.79	20.61	3.80	4.63	69.43
Salt Creek Estate	—	—	—	—	1.20	12.06	4.62	6.53	6.40	13.38	3.04	.59	(d)
CAYO DISTRICT													
Baking Pot Central Farm	6.77	2.01	1.49	.47	.99	10.06	4.98	5.78	4.80	8.92	2.30	1.60	50.17
Cayo Town	—	—	—	—	—	—	—	5.49	9.82	6.41	2.09	.31	(e)
Augustine Mountain Pine Ridge	3.82	2.16	.44	.54	2.21	6.95	4.36	8.93	9.11	11.56	2.94	.46	53.48
Listowel Boys' Training School	—	—	—	—	—	—	5.25	4.79	4.56	7.94	2.54	1.81	(f)
STANN CREEK DISTRICT													
Stann Creek Town	10.85	3.40	.13	.95	nil	16.16	5.04	3.68	16.04	22.35	6.30	.95	85.85
Stann Creek Agricultural Station	12.15	5.96	1.32	.35	1.42	19.72	3.98	3.57	13.75	17.41	5.70	1.36	86.69
False Creek Farm	—	—	—	—	—	—	—	—	13.76	13.26	5.15	1.02	(g)
Cow Creek Farm	—	—	—	—	—	—	—	—	14.76	11.75	4.91	.62	(h)
Alta Vista	—	—	—	—	—	—	—	—	17.47	13.86	4.15	.59	(i)
Middlesex	17.44	3.33	1.94	2.26	2.42	39.11	13.60	7.46	12.62	19.21	6.13	.50	126.02
Melinda Farm	—	—	—	—	—	—	—	—	—	—	5.35	1.26	(j)
TOLEDO DISTRICT													
Punta Gorda Town	13.49	4.59	2.66	3.14	6.15	36.85	29.39	15.30	20.80	11.95	3.28	2.01	149.61
Punta Gorda Agricultural Station	8.89	2.24	2.68	2.14	6.56	46.59	19.85	12.06	25.65	12.13	3.26	2.62	144.67

(a) Corozal Town ceased recording from November due to broken rain gauge.

(b) Orange Walk Town commenced recording from August.

(c) San Estevan July.

(d) Salt Creek Estate May.

(e) Cayo Town August

(f) Listowel School July.

(g) False Creek Farm } commenced recording

(h) Cow Creek Farm } from September.

(i) Alta Vista

(j) Melinda Farm commenced recording from November.

STAFF LIST AT 31ST. DECEMBER, 1950.

Director of Agriculture	..	Vacant	..	..	..	Headquarters
Senior Agricultural Officer	..	G. B. Gregory	..	..	..	Headquarters
Veterinary Officer	..	P. G. Everett	..	..	..	Belize
Livestock Officer	..	(1) S. S. Dale	..	..	..	Headquarters
Assistant Agricultural Officers	(2)	J. M. Cave	..	..	..	Corozal
	(3)	G. A. Southwell	..	..	..	Central Farm
		M. P. Benjamin	..	..	..	Stann Creek
Agricultural Instructor	..	D. D. Haynes	..	..	..	Punta Gorda
Senior Farm Demonstrator	..	F. F. Orio, Sr.	..	..	..	Orange Walk
		(4) P. B. Lizarraga	..	..	..	—
Farm Demonstrators Grade I		F. F. Orio, Jr.	..	..	..	El Cayo
		C. D. W. Atkins	..	..	..	Barranco
		H. S. Nelson	..	..	..	Belize
		J. A. Lizama	..	..	..	Louisville
		J. A. Swasey	..	..	..	Stann Creek
Farm Demonstrators Grade II		I. S. Stephenson	..	..	..	Lucky Strike
		T. L. Brackett	..	..	..	Stann Creek
		W. A. Grant	..	..	..	Central Farm
		W. J. Baeza	..	..	..	Central Farm
Farm Demonstrators employed under C.D. & W. Scheme D.229 ..		H. Parham	..	..	..	Monkey River
		F. Bautista	..	..	..	Succotz
		J. Gonzales	..	..	..	Yo Creek
		T. Ramos	..	..	..	Sittee
		N. L. Williams	..	..	..	Mullins River
		A. Thompson	..	..	..	Stann Creek
		E. Bautista	..	..	..	Carolina
		A. Gentle	..	..	..	Dump, Toledo
		(5) E. O. R. Gill	..	..	..	Punta Gorda
		J. A. Santos	..	..	..	Grace Bank
		J. Chief	..	..	..	Roaring Creek
		R. Salam	..	..	..	San Antonio, Toledo

(1) From 31.12.50. Colonial Development and Welfare Scheme D.1236.

(2) From 10.10.50 on return from secondment.

(3) Farm Manager, Baking Pot Central Farm.

(4) On leave from 1.9.50.

(5) Seconded to Marketing Board from 1.9.50.